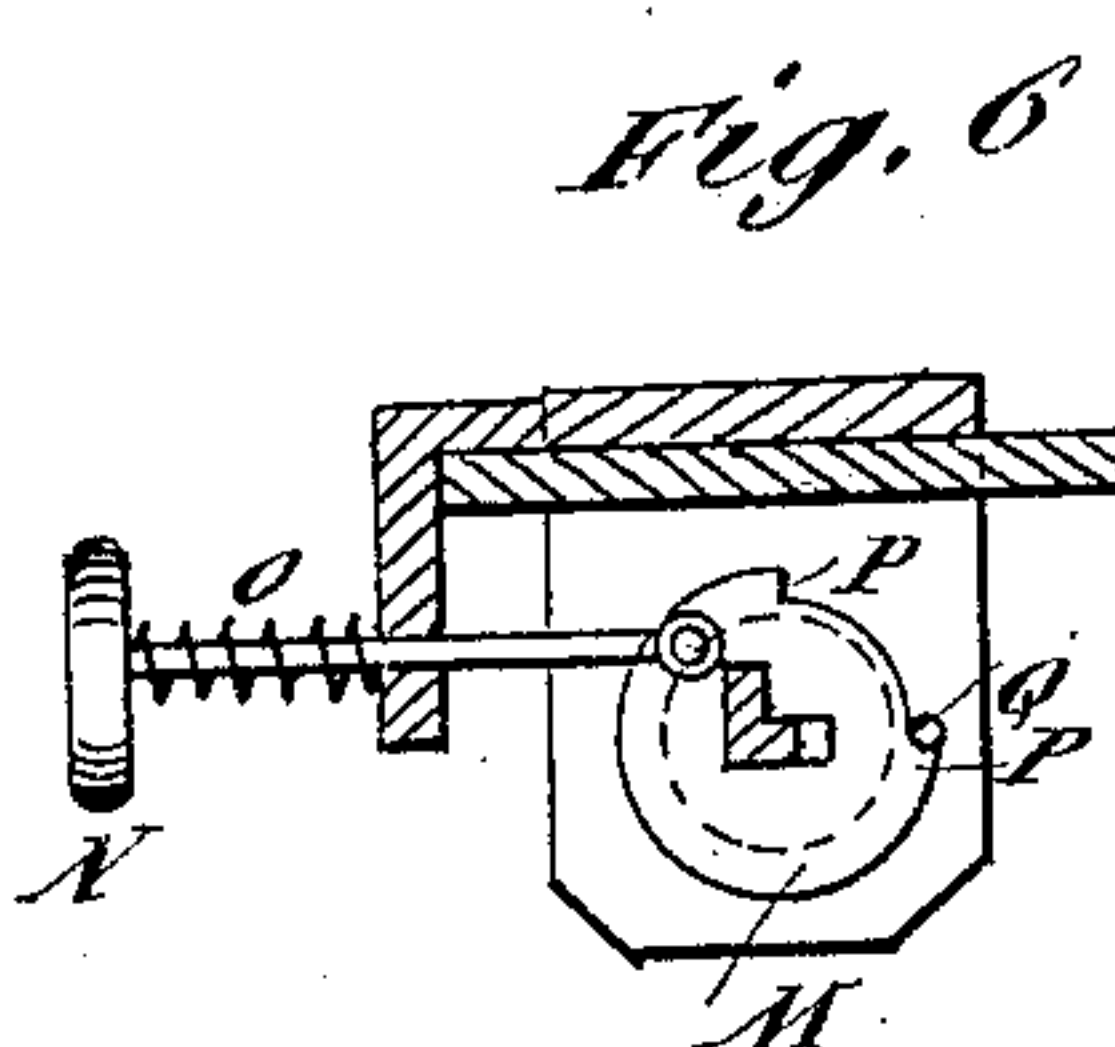
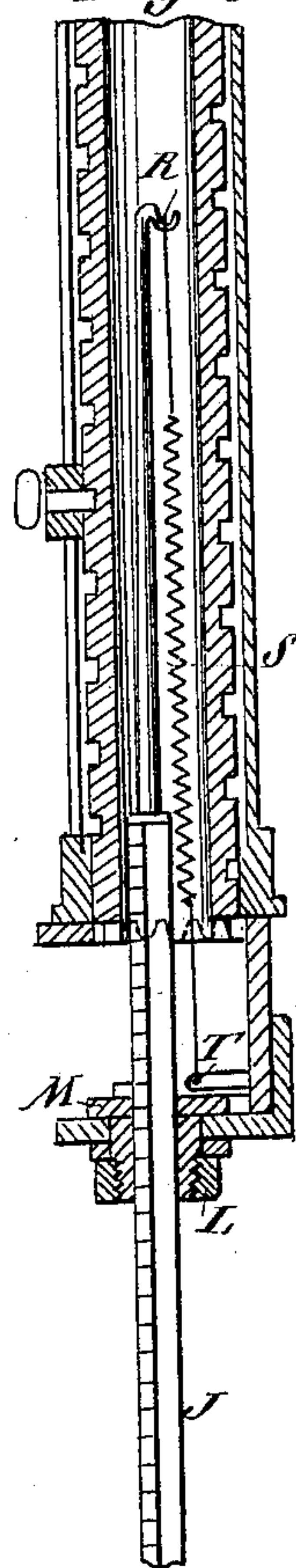
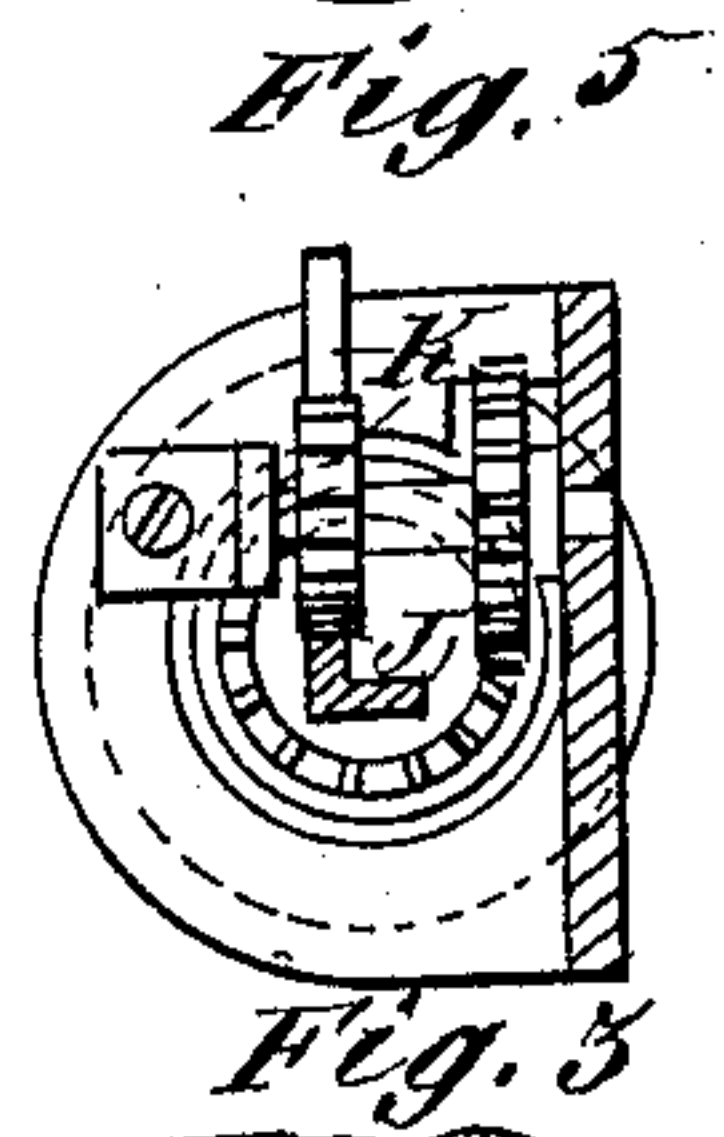
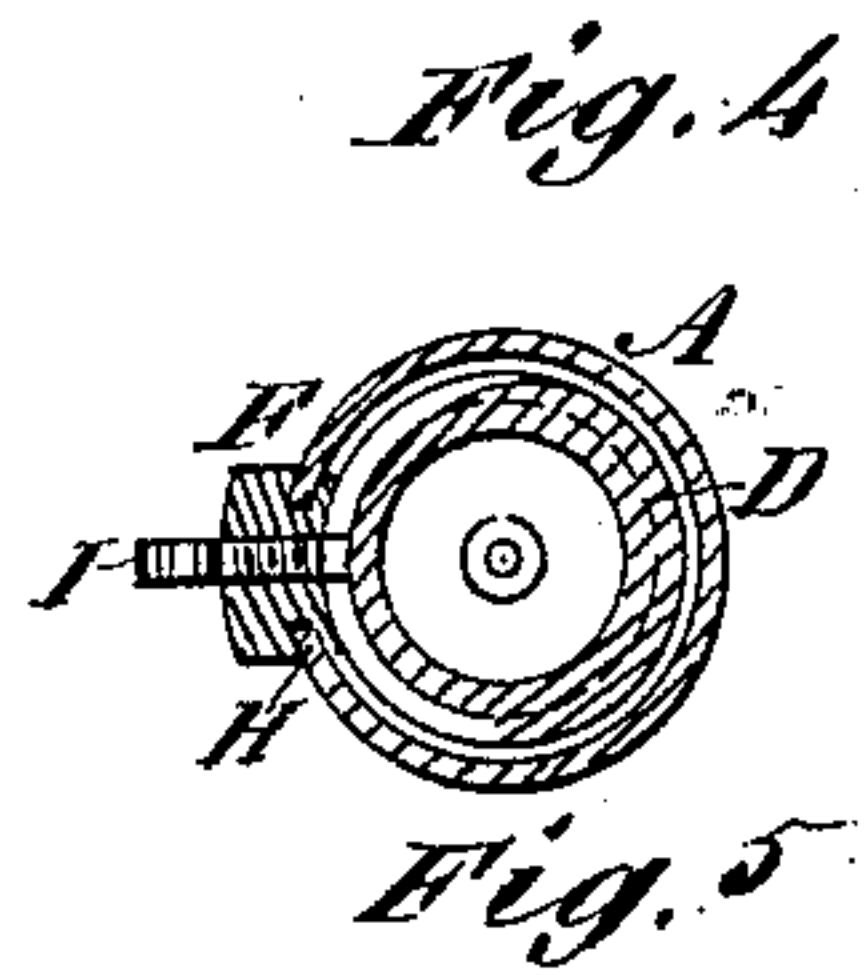
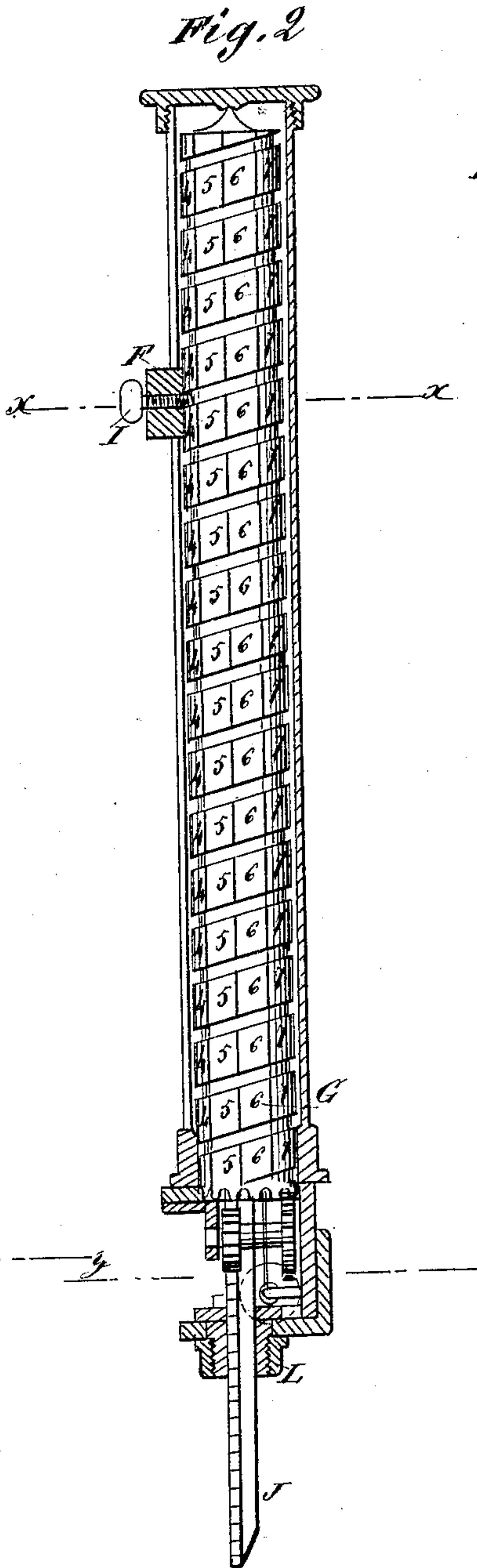
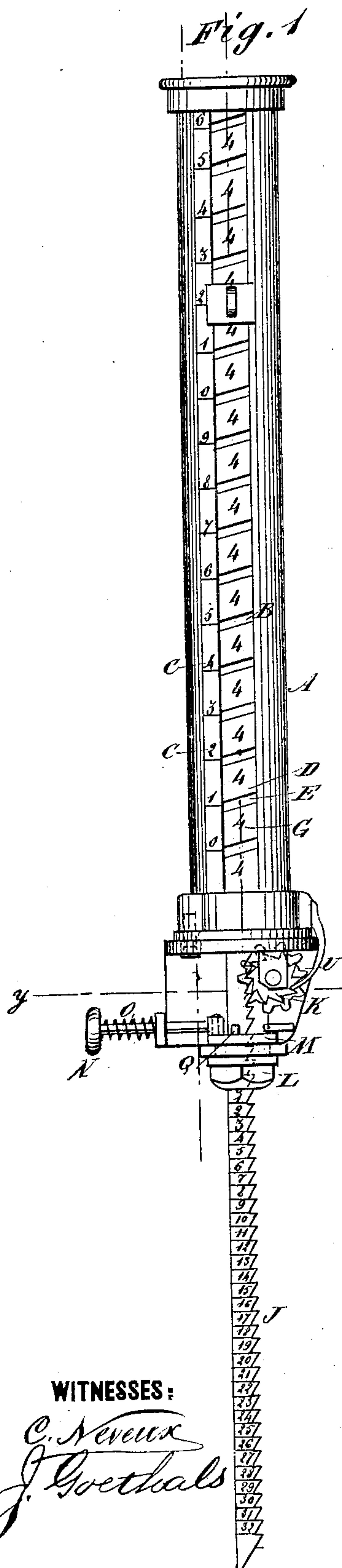


J. J. WHITE.
 ADDING-PENCIL.

Patented May 23, 1876.

No. 177,775.



WITNESSES:
C. Neveux
J. Goethals

INVENTOR:
J. J. White
 BY *Munn & Co.*
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN J. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN ADDING-PENCILS.

Specification forming part of Letters Patent No. **177,775**, dated May 23, 1876; application filed April 10, 1876.

To all whom it may concern:

Be it known that I, JOHN JOSIAH WHITE, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and Improved Adding-Pencil, of which the following is a specification:

My invention relates to an adding-pencil in which a pointer is made to turn a grooved revolving cylinder, and move a pointer along a scale on the case containing the cylinder, to record thereon the number to be added by pressing the pointer upward in the case a distance corresponding to the number to be added to the record; and it consists in, first, the sliding indicator, contrived to be connected with or detached from the spiral groove by a pin running through it, with a short screw turn—or it may be a spring, or like suitable device, (the lower end may be made to run easier in the groove by having on it a moving collar)—the object of this arrangement being to enable the operator, by turning or raising the pin, to move the indicator freely down or up, and set it at once anywhere in the longitudinal slot; second, the swivel on which this rack slides up and down, arranged by pins to make only one-fourth of a revolution, so that, with a spring to keep said rack normally engaged with the pinion, pressure on a trigger, or key, or lever will throw it out of gear for the operation of the next-described feature of the invention. If a reversed motion should be found preferable, or, in other words, the normal condition of the rack to be out of gear, then the action of the spring and trigger, &c., to be reversed, so that by pressing the latter the rack will engage with the pinion.

Figure 1 is a side elevation of my improved adding-pencil. Fig. 2 is a sectional elevation of the case. Fig. 3 is a sectional elevation of the case and the revolving cylinder. Fig. 4 is a transverse section on line X X, Fig. 2. Fig. 5 is a transverse section on line Y Y; and Fig. 6 is a transverse section on line Y Y, Fig. 2.

A is a tubular case, having a long slot, B, from end to end, along which is a column, C, of tens, hundreds, and upward, and in said tube is a hollow revolving cylinder, D, having a spiral groove, E, for working a pointer, F, up and down the tube, and also having the

spiral column of figures G, representing the units or digits of the product of the addition. The pointer or indicator is a mere block or slide, fitted to the tube, so as not to be detached, (see H, Fig. 4,) with a screw, I; or it may be a spring, or other device, connecting it with the groove of the cylinder, so that it can be readily detached for shifting it along the cylinder more quickly than by revolving it to return the indicator to the zero-point. The rack J or pointer slides into the hollow cylinder when pressed down on the book or slate, and revolves the cylinder by turning the pinion K to move the indicator along the column C for adding numbers to it, the parts being so grooved that the pointer will be moved along the record in the proportion that the rack is pressed in, so that a number will be added corresponding to the number on the rack pressed up to the gage L. I propose to extend the teeth of this rack along it to the end used as a pointer, thereby enabling it to be numbered and extended as far as may be desirable to increase the capacity of the instrument. This rack slides up and down in a swivel, M, which is turned by the thumb-bit N to throw the rack out of gear when it is to be let down after each operation, and it is turned back by the spring O. The movement of the swivel is limited by the shoulders P and pin Q, so that if it should be preferred to reverse the arrangement, so that the spring shall keep the rack out of gear, the thumb-bit may be used for throwing it in when required. The top of the rack has a hook, R, which is connected by a spring, S, of any kind, to a fixed point at T, to thrust down the rack. This connection is for the purpose of enabling the spring to be unhooked at pleasure for sliding the rack up into the cylinder when the instrument is not used, both for security, and that the bottom of the pencil may be covered. A light spring or detent pawl, U, is used in connection with the pinion, gearing with the cylinder to prevent any back motion.

I propose, in practice, to attach at the upper end one or more additional sets of cylinders and cases, successively, the cylinders having their ends connected by dowel-pins to make their motion the same to increase the capacity of the instrument.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The sliding indicator F, detachably connected to the spirally-grooved revolving cylinder, substantially as described.

2. The swivel M, having shoulders P, in

combination with stop - pin Q, thumb - bit N, and spring O, substantially as described.

JOHN J. WHITE.

Witnesses:

EDW. H. WILLIAMSON,

SAML. G. DIEHL.